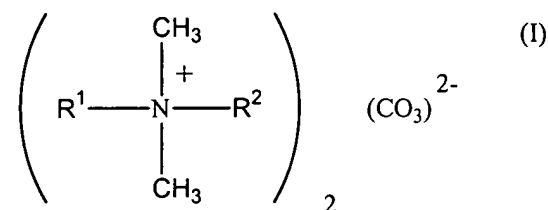


CLAIMS:

1. A method for inhibiting corrosion of a metal substrate comprising the step of contacting the substrate with a corrosion inhibiting effective amount of a composition comprising:

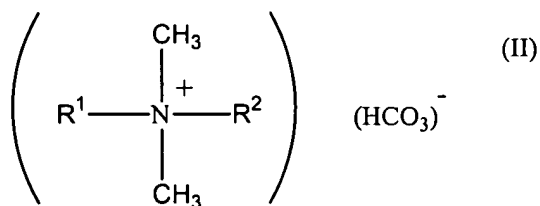
- (a) at least one quaternary ammonium compound selected from a quaternary ammonium carbonate, a quaternary ammonium bicarbonate, and mixtures thereof; and
- (b) optionally, a solvent.

2. The method of claim 1, wherein the quaternary ammonium carbonate has the formula:



wherein R¹ is a C₁-C₂₀ alkyl or aryl-substituted C₁-C₂₀ alkyl group, and R² is a C₁-C₂₀ alkyl or aryl-substituted C₁-C₂₀ alkyl group.

3. The method of claim 1, wherein the quaternary ammonium bicarbonate has the formula:



wherein R¹ is a C₁-C₂₀ alkyl or aryl-substituted C₁-C₂₀ alkyl group, and R² is a C₁-C₂₀ alkyl or aryl-substituted C₁-C₂₀ alkyl group.

4. The method of claim 2, wherein R¹ and R² are the same C₁-C₂₀ alkyl group.
5. The method of claim 2, wherein R¹ and R² are C₁₀ alkyl groups.
6. The method of claim 5, wherein R¹ and R² are n-C₁₀ alkyl groups.
7. The method of claim 2, wherein one of R¹ or R² is methyl.
8. The method of claim 7, wherein R¹ and R² are methyl.
9. The method of claim 2, wherein one of R¹ and R² is benzyl or ethylbenzyl.
10. The method of claim 1, wherein the quaternary ammonium carbonate is didecyldimethyl ammonium carbonate and the quaternary ammonium bicarbonate is didecyldimethyl ammonium bicarbonate.
11. The method of claim 1, wherein the composition further comprises:
 - (c) a surfactant selected from amine oxides, linear alcohol ethoxylates, secondary alcohol ethoxylates, ethoxylate ethers, betamines, and mixtures thereof.

12. The method of claim 11, wherein the surfactant is nonylphenol ethoxylate.
13. The method of claim 1, wherein the metal substrate is in an oil environment.
14. The method of claim 13, wherein the oil environment comprises a petroleum distillate.
15. The method of claim 14, wherein the petroleum distillate is selected from kerosene, white spirit, hydrocarbon fractions, and mixtures thereof.
16. The method of claim 1, wherein the composition further comprises
- (d) a builder;
 - (e) a colorant;
 - (f) a perfume;
 - (g) a fragrance; or
 - (h) a combination thereof.
17. The method of claim 1, wherein the metal substrate is selected from steel, cast iron, aluminum, metal alloys and combinations thereof.

18. An anti-corrosive coating for a metal substrate comprising
- (a) at least one quaternary ammonium carbonate, quaternary ammonium bicarbonate, or a mixture thereof; and
- (b) a coating material.
19. The anti-corrosive coating of claim 18, wherein the quaternary ammonium carbonate, bicarbonate, or mixture thereof is dispersed in the coating material.
20. An aqueous solution comprising a corrosion inhibiting effective amount of at least one quaternary ammonium carbonate, quaternary ammonium bicarbonate, or a mixture thereof.
21. The aqueous solution of claim 20, wherein the aqueous solution is a cleaning solution.